

PHOENIX BASIN #3
FCD GAGE ID #4828

STATION DESCRIPTION

LOCATION – The dam is located about 1/4 mile north of Peoria Avenue and about 1/4 mile east of Cave Creek Road. The gage is located at the principal outlet of the dam. Latitude N33° 35' 11.8", Longitude W112° 02' 48.8". Located in the NW1/4 SW1/4 S22 T3N R3E in the Sunnyslope 7.5-minute quadrangle.

ESTABLISHMENT – The gage was established on December 18, 2001.

DRAINAGE AREA – 0.50 mi²

GAGE – The gage is a pressure transducer type instrument located at the outlet from the dam pool. The orifice is at elevation 0.65 feet gage height, or 1,356.65 feet M.S.L., levels of April 13, 2009.

There is one staff gage at the outlet. It has a range of 4 to 25 feet gage height.

There are no crest gages at this location.

ZERO GAGE HEIGHT - is defined as the invert of the principal outlet culvert pipe. Elevation 1,356.00 feet M.S.L.

HISTORY – No history at this location prior to gage installation. Dams were constructed in the mid-1970's. A staff gage was added in 2010 or 2011.

REFERENCE MARKS –

RM-PHX3 is an FCD brass cap located on top of the dam near the gage standpipe. Elevation 30.13 feet gage height, levels of January 15, 2002.

RP1 is the concrete bottom directly in front of the outlet culvert. Elevation 0.00 feet gage height, levels of January 15, 2002.

CHANNEL AND CONTROL – The primary outlet from the dam is a reinforced concrete pipe culvert. The culvert length is 216 feet. The auxiliary spillway for the dam is located to the southeast of the principal outlet.

PRIMARY / AUXILIARY OUTLET –

The primary outlet is a 27-inch diameter concrete culvert pipe. A steel plate with a 16-inch by 16-inch opening covers the culvert entrance. The invert of the inlet is at 0.00 feet gage height, or 1,356.00 feet M.S.L. The invert of the outlet is at -1.73 feet gage height, or 1,354.27 feet M.S.L. The culvert length is 216 feet. Flow begins through the culvert at 0.00 feet gage height through a square orifice covering the culvert pipe.

The auxiliary spillway is located to the southeast of the principal outlet. The bottom width of the spillway is 100 feet. The spillway crest is at about 24.0 feet gage height, or 1,380.00 feet M.S.L.

The top of the dam elevation is about 30.0 feet gage height, or about 1,386.00 feet M.S.L.

RATING – The current discharge rating is Rating #1. The rating was developed from a culvert analysis using HY8. The spillway flows were evaluated using the weir equation for a broad-crested weir.

The current capacity rating is Rating #1, which was taken from the As-Built design plans.

DISCHARGE MEASUREMENTS – Direct measurements could be made in the natural channel below the dam.

POINT OF ZERO FLOW – Flow begins through the primary outlet at 0.00 feet gage height. Flow begins through the auxiliary spillway at approximately 24.0 feet gage height.

FLOODS / SIGNIFICANT IMPOUNDMENTS – None recorded to date.

REGULATION – None upstream of the dam. The dam regulates natural flows from the slopes of Echo Mountain.

DIVERSIONS – None

ACCURACY – Fair

JUSTIFICATION – Monitor water levels behind dam for public safety.

UPDATE – August 17, 2011
D E Gardner

